FIG. 1

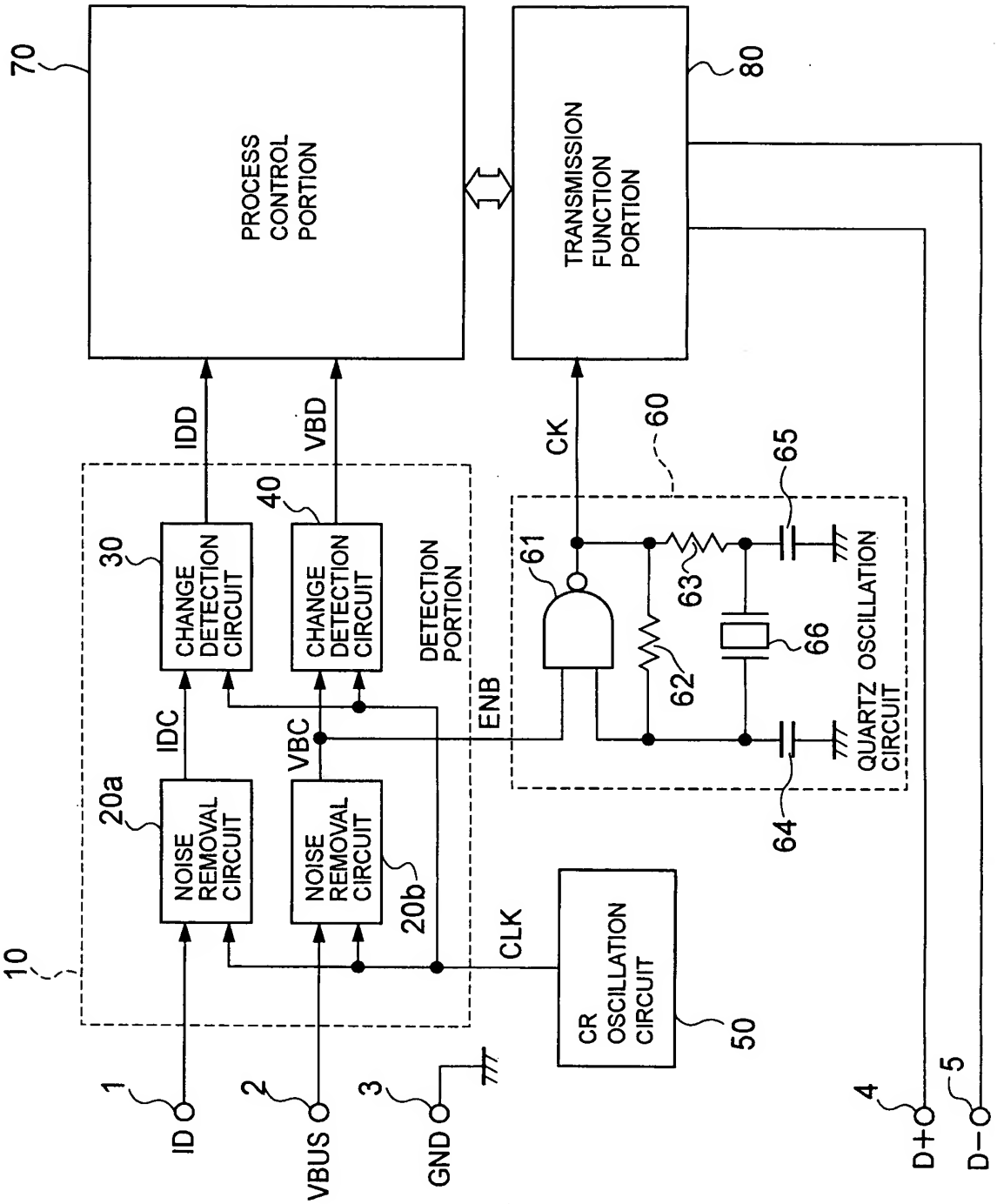
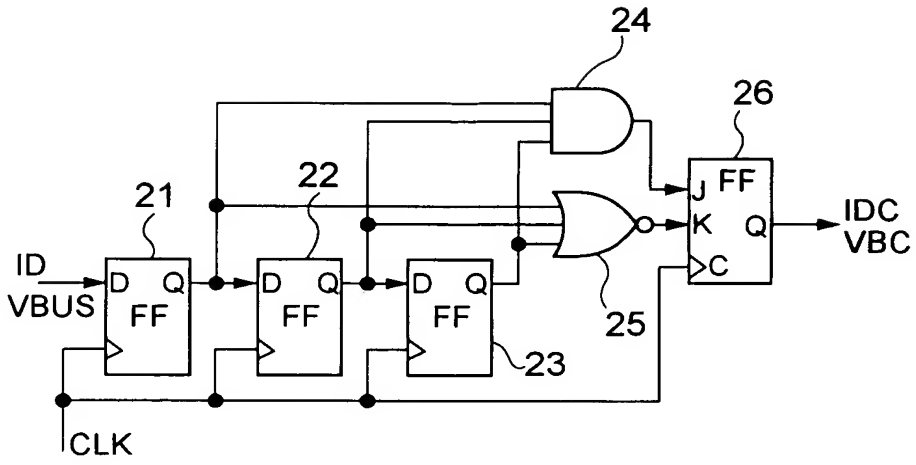
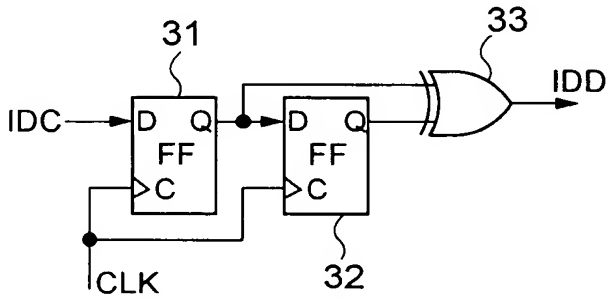


FIG. 2A



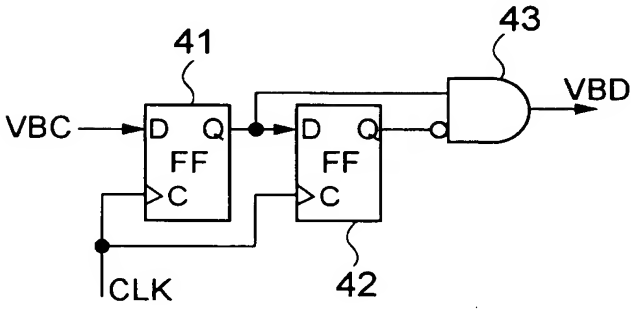
NOISE REMOVAL CIRCUIT 20

FIG. 2B



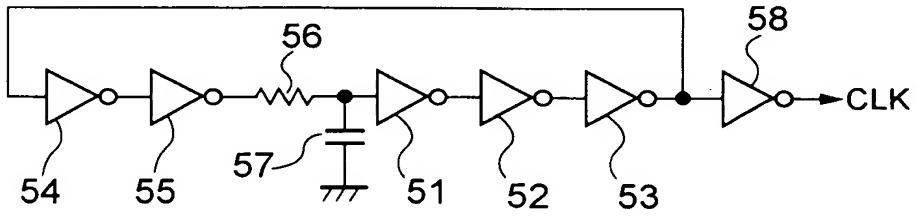
CHANGE DETECTION CIRCUIT 30

FIG. 2C



CHANGE DETECTION CIRCUIT 40

FIG. 2D



CR OSCILLATION CIRCUIT 50

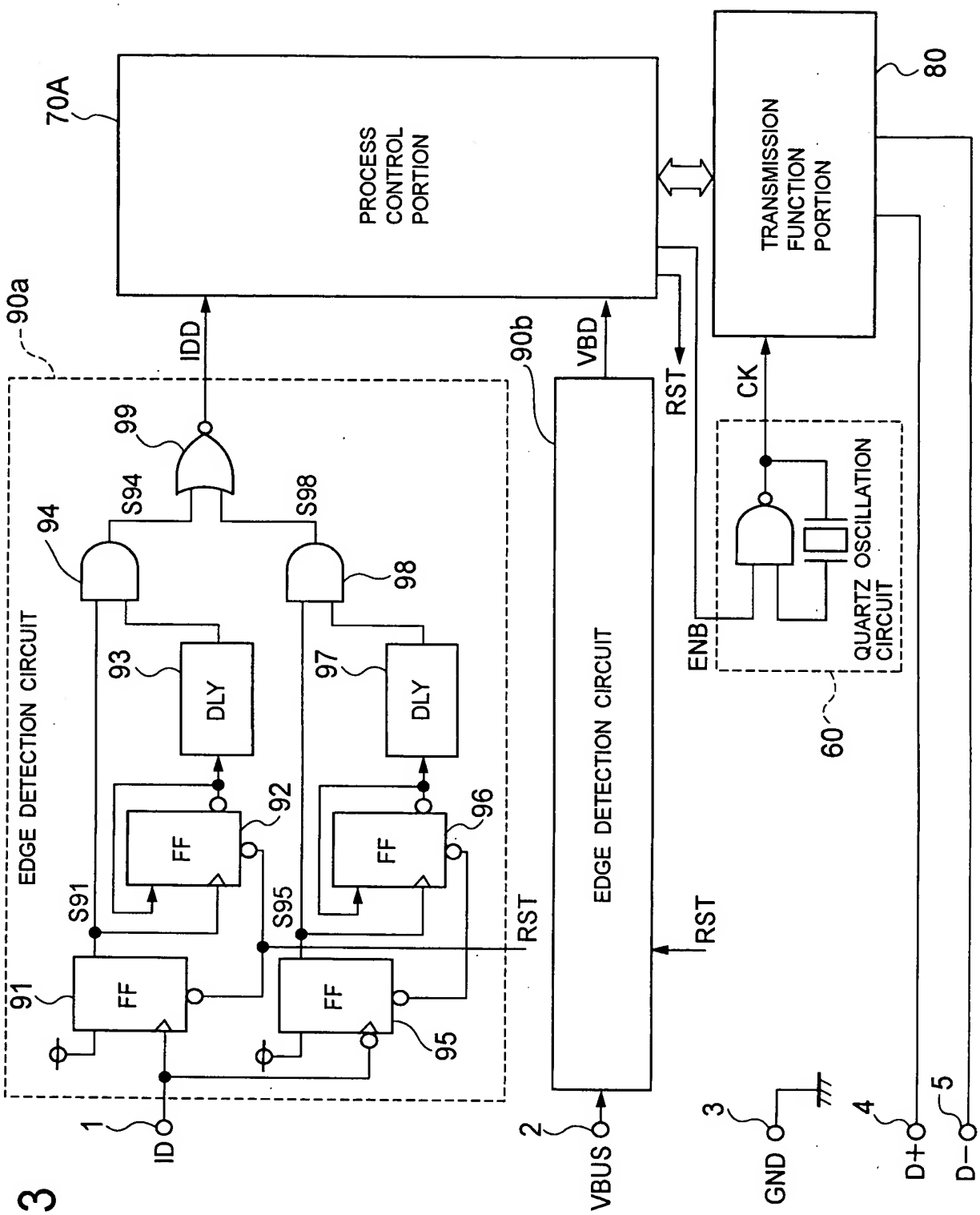

70A
PROCESS CONTROL PORTION
80
TRANSMISSION FUNCTION PORTION
90a
EDGE DETECTION CIRCUIT
IDD
99
S94
S98
94
98
93
DLY
97
DLY
92
FF
96
FF
S91
S95
RST
91
FF
FF
95
1
ID
90b
VBD
EDGE DETECTION CIRCUIT
RST
RST
CK
ENB
QUARTZ OSCILLATION CIRCUIT
60
2
VBUS
3
GND
4
D+
5
D−

FIG. 3

FIG. 4

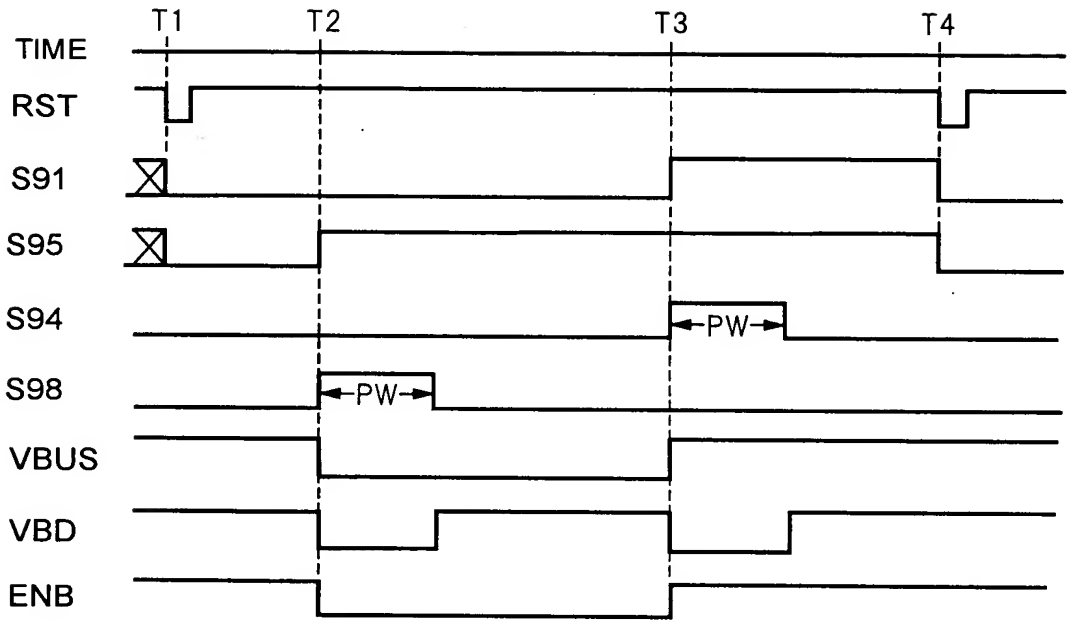


FIG. 5

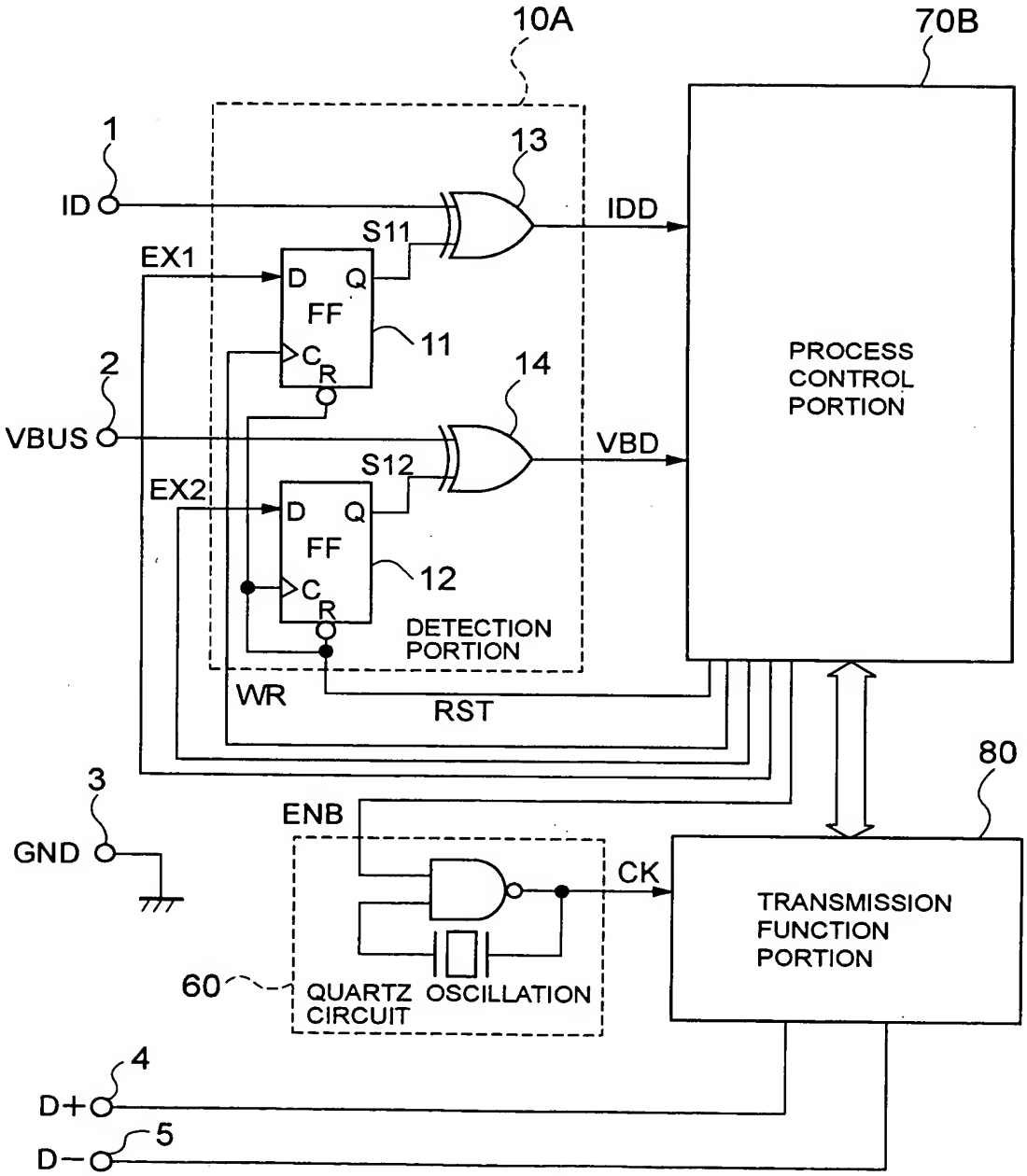

10A
70B
1
ID
13
IDD
S11
EX1
D
Q
FF
C
R
11
2
VBUS
14
VBD
S12
EX2
12
DETECTION PORTION
PROCESS CONTROL PORTION
WR
RST
80
3
GND
ENB
CK
TRANSMISSION FUNCTION PORTION
60
QUARTZ OSCILLATION CIRCUIT
4
D+
5
D−

FIG. 6

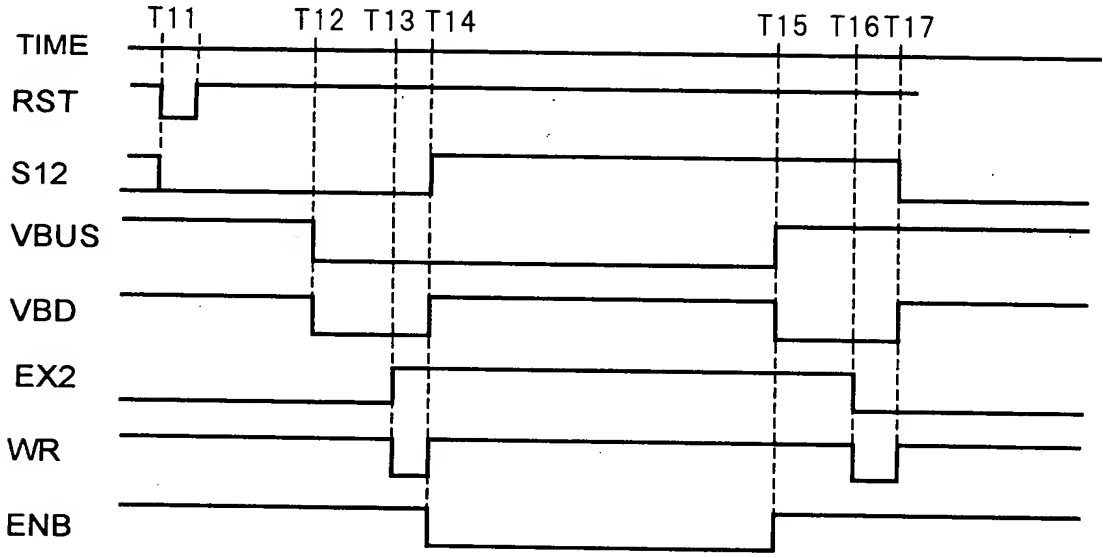


FIG. 7

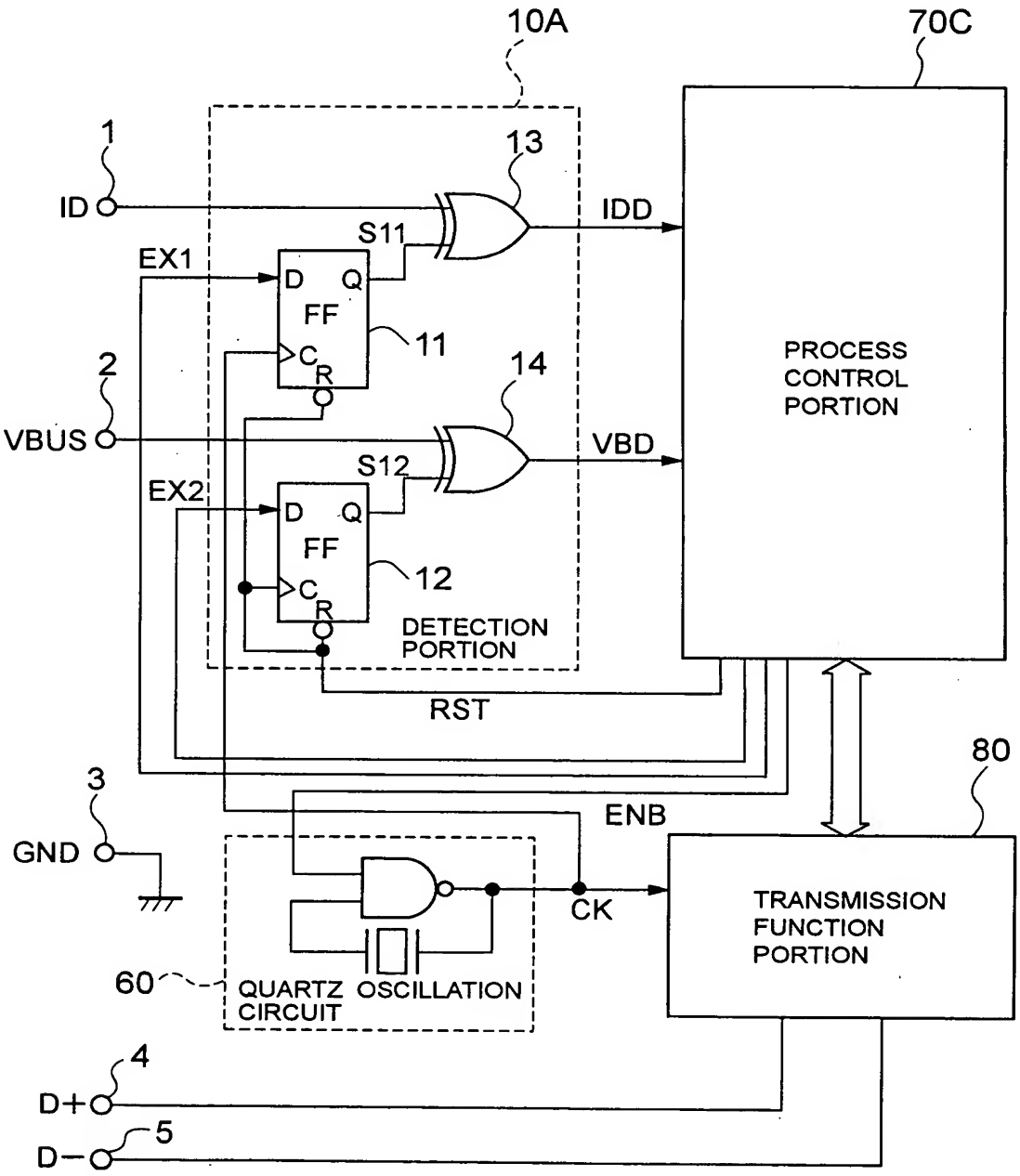

10A
70C
1
ID
13
IDD
S11
EX1
D
Q
FF
C
R
11
2
VBUS
14
VBD
S12
EX2
12
DETECTION PORTION
PROCESS CONTROL PORTION
RST
80
3
GND
ENB
CK
TRANSMISSION FUNCTION PORTION
60
QUARTZ OSCILLATION CIRCUIT
4
D+
5
D−

FIG. 8

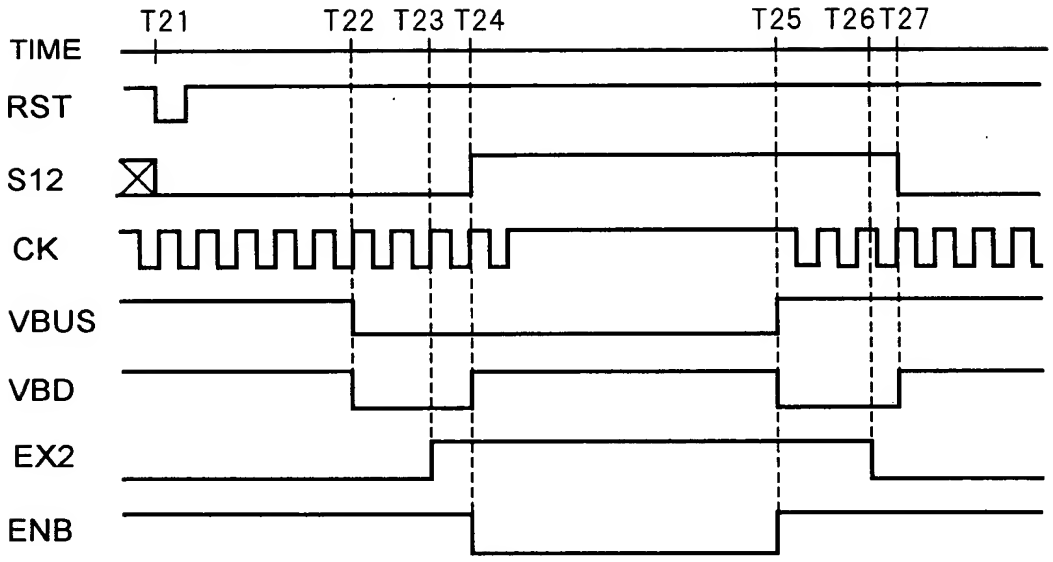
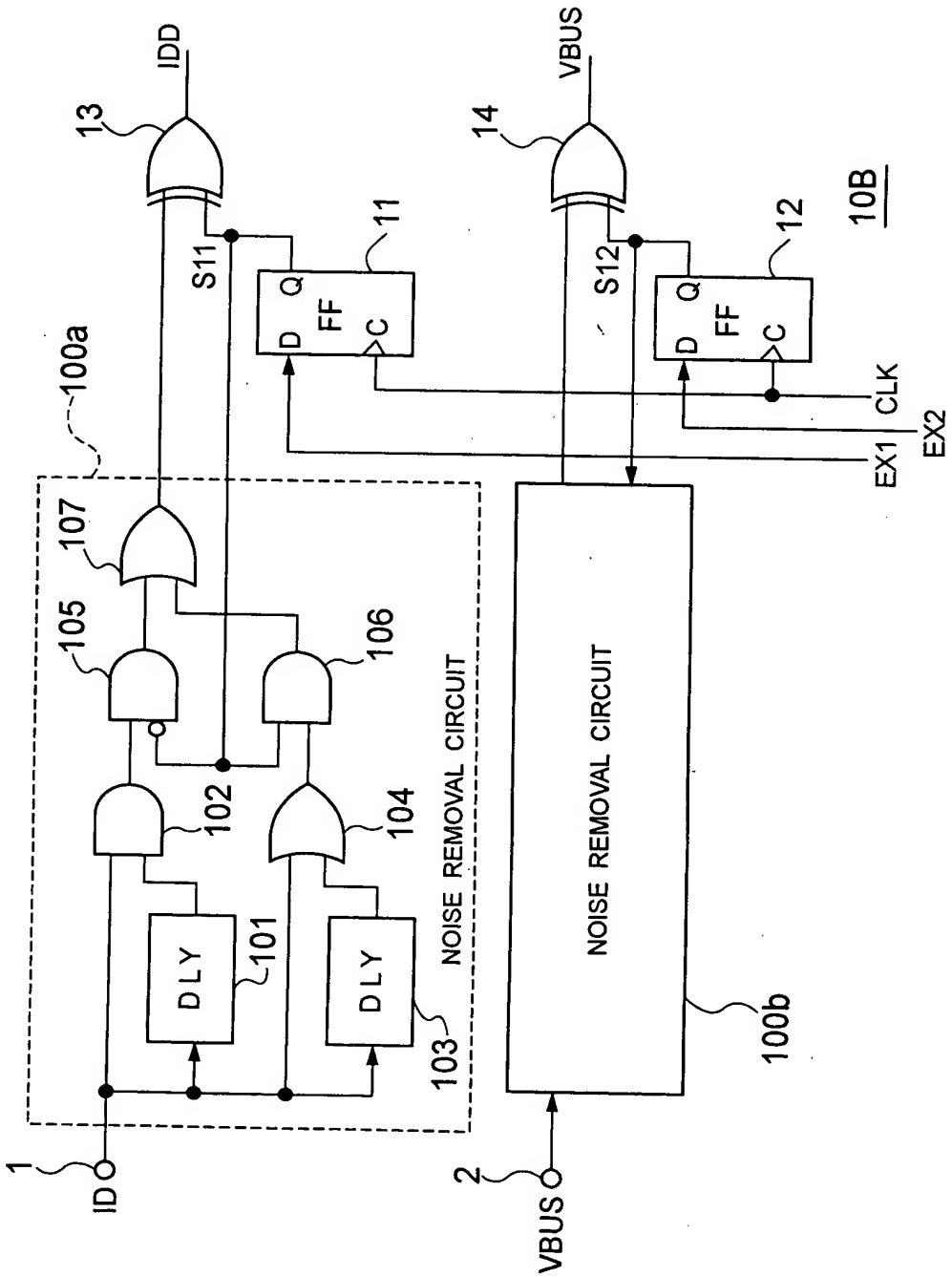


FIG. 9


IDD
VBUS
13
14
10B
11
12
S11
S12
Q
D
FF
C
CLK
EX1
EX2
100a
107
105
106
102
104
DLY
101
103
NOISE REMOVAL CIRCUIT
100b
1
ID
2
VBUS